AUTHOR: Subbotin, F.A. 3-58-5-21/35

TITLE: Preparing for the New Enrollment (Gotovyas' k novomu priyemu)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, Nr 5, pp 68-69 (USSR)

ABSTRACT: The existing preparatory courses for workmen wishing to enter a higher school can not be attended by those intending to enroll in correspondence institutes. In 1957, the Faculty of Tuition by Correspondence of the Omsk Agricultural Institute received 552 applications for 550 vacancies, but only 270 men passed the examinations. Because of this, the institute organized preparatory courses in the Tyukalinsk, Nazyvayev and Cherkal Oblast's. These are attached to secondary schools, and the scientific workers of the institute go to these districts to assist the school teachers in instructing the course students.

ASSOCIATION: Omskiy sel'skokhozyaystvennyy institut imeni S.M. Kirova (Omsk Agricultural Institute imeni S.M. Kirov)

AVAILABLE: Library of Congress

Card 1/1

SUBBOTIN F. N.

ARKHIPOV, A.S.; MASLOV, L.M.; PUL'KIS, S.A.; SOKOLOV, M.K.; SOKOLOV, N.P.;
SUBBOTIN, F.N.; SHUMILOVA, A.M.

Professor K.M.Grechishchev; obituary. Gig. i san. 22 no.6:92-93
Je '57. (MIRA 10:10)
(GRECHISHCHEV, KSENOFONT MIKHAILOVICH, 1873-1957)

SUBBOTIN, F.N., dots.

Some data on hygienic significance of nitrates in drinking water [with summary in English]. Gig. & san. 23 no.3:27-30 Mr '58.
(MIRA 11:4)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(WATER SUPPLY
eff. of nitrates in drinking water on methemoglobin in level in child)
(NITRATES, eff.
drinking water nitrates, on methemoglobin level in child)
(HEMOGLOBIN, in inf. and child
methemoglobin, eff. of nitrates in drinking water)

SUBBOTIN, F. N., [illegible], L. I.

"Modern hygienic treatment of chemical ingredients in
evaluation of the quality of water."

report submitted at the 13th All-Union Congress of Hygientists, Epidemiologists and Infectionists, 1959.

SUBBOTIN, F.N., dotsent

Nitrates in potable water and their influence on the formation of methemoglobin. Gig. i san. 26 no.2:13-17 F '61. (MIRA 14:10)

1. Iz kafedry obshchey i voyennoy gigiyeny Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(METHEMOGLOBIN) (NITRATES--PHYSIOLOGICAL EFFECT)

SUBBOTIN, F.N., dotsent

Methemoglobinemia in children caused by salts of nitric acid.
Pediatriia no.1:73-78 '62. (MIRA 15:1)

1. Iz kafedry obshchey i voyennoy gigiyeny (nachal'nik - general-mayor meditsinskoy sluzhby prof. P.E. Kalmykov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(NITRATES--PHYSIOLOGICAL EFFECT) (HEMOGLOBIN)

SUBBOTIN, G.

Workers conduct scientific experiments. NTO 2 no.12:47 D '60.
(MIRA 14:3)

1. Direktor Omskogo Doma tekhniki.
(Omsk—Tires, Rubber—Technological innovations)

L 19363-63 EPF(c)/EWT(l)/BDS/EEC(b)-2 AFFTC/ASD/ESD-3/IJP(C) Pr-4/
Pi-4 GG S/0058/63/000/008/D044/D044
B

ACCESSION NR: AR3006969

SOURCE: RZh. Fizika, Abs. 8D330

AUTHOR: Subbotin, G. I.

TITLE: Installation for study of electron paramagnetic resonance in solids

CITED SOURCE: Tr. Yestestv.-nauchn. in-ta pri Permsk. un-te, v. 11, no. 1, 1962, 61-67

TOPIC TAGS: electron paramagnetic resonance, radio spectroscope, solid

TRANSLATION: An EPR spectrometer circuit is described, the feature of which is the convenient block construction. The sweep range of 700 Oe can be covered in a time from 3 to 12 minutes. After one hour's warm-up the magnetic instability does not exceed 10^{-4}. The

Card 1/2

L 19363-63

ACCESSION NR: AR3006969

0

half-hour drift is of the same order. For a batch of 3 x 10^{-6} g-mole DPPH the signal-noise ratio is approximately 16. A batch of 3 x 10^{-7} g-mole of DPPH gives a signal/noise ratio of approximately 2. Bibliography, 14 titles. B. Ottesen.

DATE ACQ: 06Sep63 SUB CODE: PH ENCL: 00

Card 2/2

Card 1/2

[illegible]

[illegible]

[illegible] were determined for all the paramagnetic centers and [illegible] are [illegible]

SUB CODE: [illegible], [illegible]

Card 2/2

L 9182-66 EWT(1) IJP(c) GG/

ACC NR: AP6000117 SOURCE CODE: UR/0058/65/000/008/D054/D054

70

SOURCE: Ref. zh. Fizika, Abs. 8D439

AUTHORS: Aynbinder, N. Ye.; Bashina, I. N.; Grechishkin, V. S.; Kozlova, A. N.; Subbotin, G. I.

ORG: none

TITLE: Relative intensities of EPR lines in crystals in the case of an effective spin 3/2

CITED SOURCE: Tr. Yestestv.-nauchn. in.-ta pri Permsk. un-te, v. 11, no. 2, 1964, 147-151

TOPIC TAGS: electron paramagnetic resonance, EPR spectrum, transition probability, crystal structure

TRANSLATION: Formulas are given for the calculation of the energy levels and transition probabilities when the directions of the permanent magnetic field coincide with the axes of the crystalline electric field. The energy levels and the transition probabilities are obtained for the ion Cr^{3+} in $K_3CoCr(CN)_6$. The calculation was verified for strong intermediate fields. Good agreement with theory was obtained.

SUB CODE: 20

Card 1/1

SUBBOTIN, G.K.; ZHARIKOV, I.I.

Introducing the ShI-3 eudiometers in mines. Bezop.truda v prom. 3 no.10:10 O '59. (MIRA 13:2)

1. TSentral'naya nauchno-proizvodstvennaya laboratoriya voyenizirovannykh gornospasatel'nykh chastey Kuzbassa.
(Eudiometer) (Mine gases)

SUBBOTIN, G.K.

OOG-1 volumetric-optical gas analyser. Zav.lab. 28 no.4:517 '62. (MIRA 15:5)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya po gornospasatel'nomu delu Kuznetskogo ugol'nogo basseyna.
(Gases—Analysis)

SUBBOTIN, G.N., inzh.

Mechanical fiber catcher. Tekst.prom. 20 no.3:67-68 Mr '60.
(MIRA 14:5)

1. Ivanovskiy melanzhevyy kombinat.
(Textile industry—Equipment and supplies)
(Salvage (Waste, etc.))

SUBBOTIN G P

DEDOV, Ivan Stepanovich; SUBBOTIN, Gavrila Petrovich; PYLAYEVA, A.P., red.
GUREVICH, M.M., tekhn.red.

[Economic improvement of collective flax farms; practices of collective farms in Gzhatsk District] Pod"em ekonomiki l'novodcheskikh kolkhozov; iz opyta kolkhozov Gzhatskogo raiona. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 142 p. (MIRA 11:4)
(Gzhatsk District--Flax)

SUBBOTIN, I., mashinist burovogo stanka.

Valuable innovations. Mast.ugl. 5 no.4:13-14 Ap '56. (MLRA 9:7)
(Kuznetsk Basin--Boring)

KONOV, V., inzh.; SAKHAROV, S., inzh.; SUBBOTIN, I., inzh.; CHEREMNYKH, Ye., inzh.;
KARYAKO, B., inzh.; RASSHCHEPKIN, V., inzh.; BORISOVA, T., inzh.;
PEREPELITSYN, N., inzh.; GARMASH, V., inzh.; GOLOVINA, V., inzh.

New developments in building practice. Na stroi. Ros. 4 no.1:7,11,14,18, 26,30 Ja '63. (MIRA 16:3)

(Building—Technological innovations)

SUBBOTIN, I.G., aspirant

Indirect determination of the tension of telpher cables. Izv.vys. ucheb.zav.; geod. i aerof. no.1:115-119 '64. (MIRA 17:12)

1. Kiyevskiy inzhenerno-stroitel'nyy institut.

SUBBOTIN, K. D.

PA 28T17

USSR/Engineering
Drilling
Geology

Mar/Apr 1947

"Simplification of Production of Diagrams of Geological Documentation of Drilling Work," K. D. Subbotin, Sibay Mine, $\frac{1}{2}$ p

"Tsvetnye Metally" No 2

Four methods are listed for simplifying geological diagrams. They were developed to save time and money on a Baymak geological research party conducted by "UralTsvetMetRazvedka."

28T17

BS

BEUS, A.A., doktor geol.-miner. nauk; SEVEROV, E.A.; SITNIN, A.A.; SUBBOTIN, K.D.; SERDYUCHENKO, D.P., doktor geol.-miner. nauk, otv. red.; GRISHINA, T.B., red.izd-va; POLYAKOVA, T.V., tekhn. red.

[Albitized and greisenized granites (apogamites)] Al'bitizirovannye i greizenizirovannye granity (apogranity). Moskva, Izd-vo Akad. nauk SSSR, 1962. 195 p. (MIRA 16:2)

1. Laboratoriya geokhimii metasomaticheskikh protsessov, svyazannykh s granitoidami Instituta mineralogii, geokhimii i kristallokhimii redkikh elementov (for Beus, Severov, Sitnin, Subbotin).

(Granite) (Trace elements)

BEUS, A.A.; SUBBOTIN, K.D.

Lithium, beryllium, and fluorine as indicators of deep prospecting for beryllium-bearing granitoids. Sov. geol. 7 no.5: 50-57 My '64 (MIRA 18:2)

1. TSentral'naya laboratoriya prikladnoy geokhimii Geologo-geokhimicheskogo tresta i Institut geokhimii i kristallokhimii redkikh elementov.

SUBBOTIN, K.D.; GANZEYEVA, L.V.

Bertrandite-bearing granites and greisens in Kazakhstan. Sov. geol. 8 no.3:113-115 '65. (MIRA 18:5)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR.

SUBBOTIN, K. N.

Subbotin, K. N.--"Strength and Stability of Slant-Angle Freely Supported Plates." Cand Tech Sci, Moscow Order of Lenin Aviation Inst imeni Sergo Ordzhonikidze, 25 Jan 54. (Vechernyaya Moskva 14 Jan 54)

SO: Sum 186, 22 July 1954

SUBBOTIN, L.G., dots.; RYAZANSKIY, M.P., aspirant

New methods for treating hypotrophy of young animals ("Plasma and blood therapy in treating hypotrophy of young animals at an early age" by F.F. Miuller. Reviewed by L.G. Subbotin, M.P. Riazanskii). Veterinariia 35 no.8:90-91 Ag '58. (MIRA 11:9)

1. Kazanskiy veterinarnyy institut imeni N.E. Baumana.
(Blood as food and medicine)
(Veterinary medicine) (Miuller, F.F.)

BABICH, E.S.; PIRVERDYAN, A.M.; SUBBOTIN, M.A.

Hydrodynamic study of the process of tar injection into the well bottom zone. Trudy AzNII DN no.10:389-398 '60. (MIRA 14:4)
(Oil fields--Production methods)

ALI-ZADE, A.A.; RZABEKOV, Z.F.; SUBBOTIN, M.A.

Results of the scientific research of institutes for 1963 and the economic efficiency of the operations introduced. Neft. khoz. 42 no.7:67-70 Jl '64. (MIRA 17:8)

1. Azerbaydzhanskiy nauchno-issledovatel'skiy institut po dobyche nefti.

[illegible]

O forme koeffitsiyentov stepennykh razlozheniy algebraicheskikh funktsiy. Novocherkassk, Izv. Donsk. politekhn. in-ta, 7 (1919), 226-251.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Rashevskiy, P. K.
Moscow-Leningrad, 1948

SUBBOTIN, M. F.

Chislennoye integrirovaniye differentsial'nykh uravneniy, I. Tashkent, Byull. Sr-Az. un-ta, 16 (1927), 273-287.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Rashevskiy, P. K.
Moscow-Leningrad, 1948

SUBBOTIN, M. F.

Chislennoye integrirovaniye differentsial'nykh uravneniy. Tashkent, Byull. Sr-Az. un-ta, 17 (1928), 21-29.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Rashevskiy, P. K.
Moscow-Leningrad, 1948

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

A

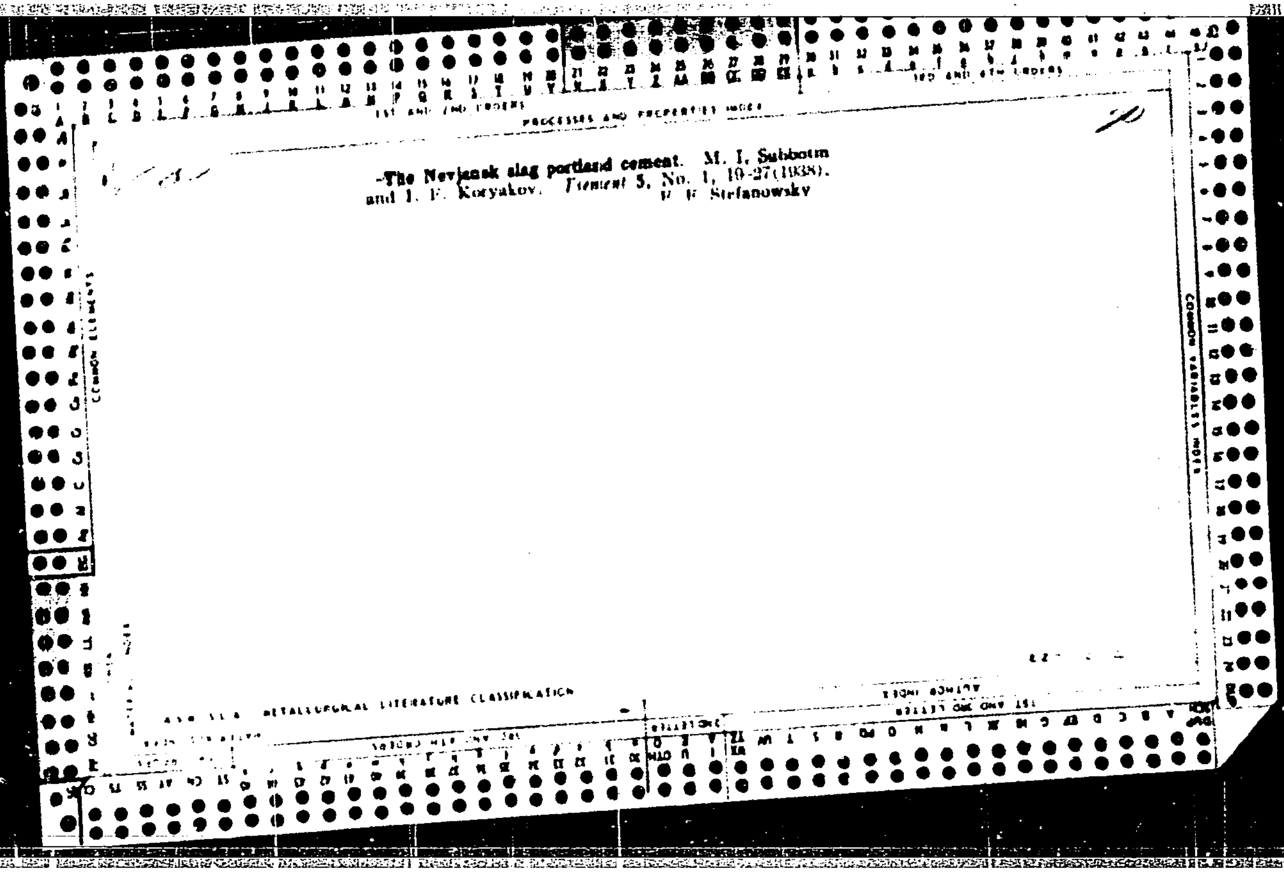
A53

555. Anomaly in Theory of Orbits. M. Subbotin. *Comptes Rendus (Doklady) de l'Acad. des Sciences, U.S.S.R.*, 4. 4. *pp.* 175–178, 1936. *In French.*—It is shown how a general anomaly can be found in the theory of central orbits which includes as special cases, the eccentric, true and tangential anomalies. G. C. McV.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SUBBOTIN, M. F.

Kurs nevesnoy Mekhaniki, 2, ONTI, 1937.



PROCESSES AND PROPERTIES INDEX

The Nevjansk slag portland cement. M. I. Subbotin and I. F. Koryakov. *Tsement* 5, No. 1, 10-27 (1938).
V. P. Stefanowsky

METALLURGICAL LITERATURE CLASSIFICATION

SUBBOTIN, M. F.

Mnogoznachnyye tablitsy logarifmov. M. - L., Izd. AN (1940).

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Rashevskiy, P. K.
Moscow-Leningrad, 1948

Dr. Physico-Mathematical Sci. Mbr., Leningrad State Univ.,-1940-. Sci., Explosion
1st Sov. atomic bomb, Usb-Urt Plateau, 1949.

SUBBOTIN, M. F.

"Practical Aspects of New Forms in the Theory of Agitated Motion"; "On Certain Movement Properties in the n-Body Problem," Dok. AN. 27, No. 5. 1940.

SUBBOTIN, M. F.

Kurs nebesnoy mekhaniki, i, OGIZ, 1941.

SUBBCTOTIN4M8F8 600

1. SUBBOTIN, M. F.

2. USSR (600)

"Computation of secular disturbances," Astron. Zhur., 18, No. 1, 1941. Astronomical observatory, Leningrad University.

9. [redacted] Report U-1518, 23 Oct 1951

[illegible]

"On a Method for Augmenting the Convergence of the Fundamental Trigonometric Series for Celestial Mechanics," Dok. AN, 40, No. 8, 1943. Inst. Theoretic Astron., Dept. Physico-Math. Sci., Acad. Sci. (Mbr.,-1943-; Dir.,-1944-49-).

[illegible], N. F.

"Elastic Oscillations in the Case of Resistance Proportionate to the Square of the Velocity." Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 1-2, 1944. Submitted 2 Aug 1943.

Report U-1556, 14 Nov 1951.

Order Labor Red Banner, 1945.

SUBBOTIN, M. F.

Perturbation

Tables for the analysis of perturbed functions obtained by means of linear transformation and of Legendre's transformation. Biul. Inst. teor. astron. 4 No. 1, 1947.

Cor. Mbr., Acad. Sci., 1947-. Dept. Physico-Math. Sci..Prize, 1947, publ.

9. Monthly List of Russian Accessions, Library of Congress, August 1952 1953, Uncl.

SUBBOTIN, M. F.

Perturbation

Certain means of improving the similarity of fundamental analysis of the theory of perturbed motion. Biul. Inst. twor. astron. 4, No. 1, 1947.

9. Monthly List of Russian Accessions, Library of Congress, August 1952 1953, Uncl.

SUBBOTIN, M. F.

PA 57T15

USSR/Acad Sci

Nov/Dec 1947

"Regular Session of Department of Physicomathematical Sciences of the Academy of Sciences, USSR" ½ p

"Izv Akad Nauk SSSR, Ser Fiz" Vol XI, No 6

Papers submitted at the May session by: M. F. Subbotin, G. A. Shayn, I. V. Obreimov, A. R. Prikhod'ko, I. V. Rodinikova, A. S. Zavel'skiy, S. Kh. Matushevskiy, M. N. Reyfman, Yu. M. Sukharevskiy, and V. S. Nesterov. Papers submitted at the Jun session by: A. N. Kolmogorov, V. K. Arkad'yev, and A. V. Shubnikov.

57T15

SUBBOTIN, M. F.

USSR/Mathematics - Finite Differences

21 Sep 53

"Expansion of the Finite Difference of a Function in the Differences of its Derivative," Sh. Ye. Mikeladze, Math Inst, Acad Sci Georgian SSR

DAN SSSR, Vol 92, No 3, pp 479-482

Outlines a method for constructing the expansions of a function in the differences of its derivative. States that particular results were obtained earlier by M. F. Subbotin (Byul Sredneaz Gos Un-ta (Bull of Central Asia State Univ), No 16, 273 (1942); No 17, 21 (1928) (sic)) and 20 years later by W. G. Bickley using symbolic methods (J Math and Phys (Mass), 27, 3, 191 (1948)). Presented by Acad A. N. Kolmogorov 20 Jul 53.

268T80

SUBBOTIN, M. F.

262T31

USSR/ Astronomy - Conference

Jul/Aug 53

"Session Held by the Astronomical Council, Academy of Sciences USSR, and by the Institute of Physics and Astronomy, Academy of Sciences of Estonia SSR, in Tartu 27-29 May 1953," V. S. Safronov

Astr Zhur, Vol 30, No 4, pp 465-467

Session, held 27-29 May 53 in Tartu, was devoted to the dynamics of the galaxy. Brief reports were given by participants whose names follow: I. G. Eykhfel'd, pres, Acad Sci Est SSR; G. I. Naan, Vice-pres, Acad Sci Est SSR; Acad G. A. Shayn; A. A. Mikhailov, M. F. Subbotin, and D. D. Maksutov, all Corr Mem. Acad Sci USSR and Active Mem of Acad Sci Est SSR; Prof T. Ya. Rootsmyae; Prof A. N. Deych; Prof K. F. Ogorodnikov; and Prof S. K. Vsekhsvyatskiy.

SUBBOTIN, M.F.; YAKHONTOVA, N.S., prof., otv. red.; PEVZNER, R.S., ~~tekhn.~~ red.

[Ephemerides of minor planets for 1949] Efemeridy malykh planet na 1949 god. Moskva, Izd-vo Akad. nauk SSSR, 1948. 122 p.
(MIRA 15:2)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta Teoreticheskoy Astronomii chlen-korrespondent Akademii nauk SSSR (for Subbotin).
(Planets, Minor—Ephemerides)

SUBBOTIN, M.F.

Subbotin, M.F. "Theoretucal astronomy," In symposium: Astronomiya v SSSR za tridtsat' let, Moscow-Leningrad, 1948, p. 50-70

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

Mbr., Editorial Board, Astornomicheskiy Zhurnal, -1949-.

SUBBOTIN, M. F.

"Proizkhod i vuzrast na zemiata. Prevel ot ruski ot 2. prer, izd. Todor Aleksandrov. (Sofiya) Nauka i izkustvo (1951) 54 P. (Nauchnopopuliarna biblioteka) (The origin and age of the earth. Tr. from the Russian)

SO: East European, L. C. Vol. 2, No. 12, Dec., 1953

ZHONGOLOVICH, I.; SUBBOTIN, M.F., chlen-korrespondent Akademii nauk SSSR, otvetstvennyy redaktor, direktor.

[The earth's external field of gravity and the basic constants related to it] Vneshnee gravitatsionnoe pole zemli i fundamental'nye postoiannye, sviazannye s nim. Leningrad, Akademiia nauk SSSR, 1952. 126 p. (MLRA 6:5)

1. Institut teoreticheskoy astronomii Akademii nauk SSSR. 2. Akademiya nauk SSSR (for Subbotin). (Gravity)

SUBBOTIN, M. F.

Mechanics, Celestial.

"Problem of n-bodies in celestial mechanics and cosmogony." G. F. Khil'mi. Reviewed by M. F. Subbotin. Sov. kniga no. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

SUBBOTIN, M.F.; YAKHONTOVA, N.S., otv.red.

[Ephemerides of minor planets for 1954] Efemeridy malykh planet na 1954 god. Moskva, Izd-vo Akad.nauk SSSR. Vol.8. 1953. 175 p. (MIRA 15:2)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta teoreticheskoy astronomii, chlen-korrespondent AN SSSR (for Subbotin).
(Planets, Minor--Ephemerides)

SUBBOTIN, M.F.

"Astronomical yearbook of the U.S.S.R." and the principal tasks of ephemeris astronomy. Biul.Inst.teor.astron. 5 no.8:466-475 '53.
(Astronomy--Yearbooks) (MLRA 7:9)

SUBBOTIN, M.F.

Interpolation of magnitudes given by astronomical yearbooks. Astron. tsir. no. 136:8-9 Mr '53. (MLRA 6:6)

1. Institut teoreticheskoy astronomii Akademii nauk SSSR.
(Astronomy--Yearbooks)

SUBBOTIN, M.F.; GIZHITSKIY, A.M., professor, redaktor

[Astronomical yearbook of the U.S.S.R. for 1957] Astronomicheskii ezhegodnik SSSR na 1957 g. Moskva, Izd-vo Akad. nauk SSSR. Vol.36 1954. 584 p. (MLRA 7:8)

1. Direktor Instituta teoreticheskoy astronomii, chlen-korrespondent AN SSSR (for Subbotin) 2. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
(Astronomy--Yearbooks)

Subbotin M.F.

LYAPUNOV, A.M.; SRETENSKIY, L.N., otvetstvennyy redaktor; KOLMOGOROV, A.M., akademik; SMIRNOV, V.I., akademik; SUBBOTIN, M.F.; ISHLINSKIY, A.Yu.; MIGIRENKO, G.S., kandidat fizicheskikh-matematicheskikh nauk; PETKEVICH, V.V., kandidat fizicheskikh-matematicheskikh nauk; GERMOGENOV, A.V., redaktor; ALEKSEYEVA, T.V., tekhnicheskiy redaktor.

[Collected works] Sobranie sochinenii. Moskva, Izd-vo Akademii nauk SSSR. Vol. 1. 1954. 446 p. (MLRA 7:11)

1. Chlen-korrespondent Akademii nauk SSSR (for Sretenskiy and Subbotin) 2. Deystvitel'nyy chlen Akademii nauk SSSR (for Izhlinskiy)
(Liapunov, Aleksandr Mikhailovich, 1857-1918) (Mathematics)

SUBBOTIN, M.F.

I.I.Putilin; obituary. Astron. tsir. no. 148:17 Ap '54.(MLRA 7:8)

1. Institut teoreticheskoy astronomii Akademii nauk SSSR.
(Putilin, Ivan Ivanovich, 1893-1954)

SUBBOTIN, M.F., redaktor; GIZHITSKIY, A.M., professor, redaktor.

[Occultations visible in 1956 in Abastumani, Irkutsk, Kazan', Kiev, Kitab, Leningrad, Lvov, Moscow, Odessa, Riga, Stalinabad, Tashkent, Tomsk and Kharkov] Pokrytiia zvezd lunoiu vidimye v Zbzstumani, Irkutske, Kazani, Kieve, Kitabe, Leningrade, L'vove, Moskve, Odesse, Rige, Stalinabade, Tashkente, Tomske, Khar'kove, v 1956 g.; prilozhenie k "Astronomicheskomy Ezhegodniku SSSR". na 1958 g. Moskva, 1955. 33 p.[Microfilm] (MLRA 8:10)

1. Direktor Instituta teoreticheskoy astronomii (for Subbotin).
2. Chlen-korrespondent Akademii nauk SSSR(for Subbotin).3.Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
(Occultations)

[illegible]

Karl Fridrih Gauss, on the centenary of his death (1855-1955). Collection of essays under the general

LYAPUNOV, Aleksandr Mikhaylovich, akademik; SRETENSKIY, L.N., redaktor; KOLMOGOROV, A.N., akademik, redaktor; SMIRNOV, V.I., akademik, redaktor; SUBBOTIN, M.F., redaktor; ISHLINSKIY, A.Yu., redaktor; MIGIRENKO, G.S., kandidat fiz.-mat. nauk, redaktor; PETKEVICH, . V.V., kandidat fiz.-mat. nauk, redaktor; KIRNARSKAYA, A.A., tekhnicheskiy redaktor.

[Collected works] Sobranie sochinenii. Moskva, Izd-vo Akademii nauk SSSR. Vol.2. 1956. 472 p. (MLRA 9:6)

1.Chlen-korrespondent AN SSSR (for Sretenskiy, Subbotin).
2.Deystvitel'nyy chlen AN USSR (for Ishlinskiy)
(Dynamics) (Differential equations)

SUBBOTIN, M.F.

Works of Henri Poincaré on celestial mechanics. Vop.ist.est. i tekh. no.2:114-123 '56. (MIRA 10:1)
(Poincaré, Jules Henri, 1854-1912)

SUBBOTIN, M.F.

Theory of relativity and celestial mechanics. Astron.zhur. 33 no.2:
251-258 Mr-Ap '56. (MLRA 9:8)
(Mechanics, Celestial) (Relativity (Physics))

SUBBOTIN, M.F., otvetstvennyy red.

[Astronomical yearbook of the U.S.S.R. for 1960] Astronomicheskii ezhegodnik SSSR na 1960 g. Moskva. Vol.39. 1957. 630 p. ----[Occultations visible in Abastumani, Irkutsk, Kazan, Kiev, Kitab, Leningrad, Lvov, Moscow, Odessa, Riga, Stalinabad, Tashkent, Tomsk, and Kharkov during 1958-1959] Pokrytiia zvezd lunoiu, vidimye v Abastumani, Irkutske, Kazani, Kieve, Kitabe, Leningrade, L'vove, Moskve, Odesse, Rige, Stalinabade, Tashkente, Tomske, Khar'kove v 1958-1959 gg 1957. 60 p. (MIRA 10:12)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta teoreticheskoy astronomii AN SSSR , chlen-korrespondent AN SSSR.
(Astronomy--Yearbooks) (Occultations)

SUBBOTIN, M.F.; YAKHONTOVA, N.S., otv. red.

[Ephemerides of minor planets for 1959] Efemeridy malykh planet na 1959 god. Moskva. Vol. 13. 1958. 169 p. (MIRA 11:12)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta teoreticheskoy astronomii AN SSSR, chlen-korrespondent AN SSSR (for Subbotin).

(Planets, Minor)

SUBBOTIN, M.F., otv.red.

[Astronomical Yearbook of the U.S.S.R. for 1961] Astronomicheskii ezhegodnik SSSR na 1961 g. Moskva. Vol.40. 1959. 652 p. [__ Lunar occultations of stars visible in Abastuman, Irkutsk, Kazan, Kiev, Kitab, Leningrad, Lvov, Moscow, Odessa, Riga, Stalinabad, Tashkent, Tomsk, Kharkov in 1960-1961] ___ Pokrytiia zvezd lunoiu vidimye v Abastumani, Irkutske, Kazani, Kieve, Kitabe, Leningrade, L'vove, Moskve, Odesse, Rige, Stalinabade, Tashkente, Tomske, Khar'kove v 1960-1961 gg. 1959. 60 p. (MIRA 13:1)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta teoreticheskoy astronomii AN SSSR; chlen-korrespondent AN SSSR (for Subbotin).

(Astronomy—Yearbooks) (Occultations)

T.I. Mashinskaya, and K.G. Shumikhina participated in the preparation of preliminary data for the computer and in computing the control points. A.G. Mal'kova and G.A. Mazing prepared the ephemerides of the sun and moon in the form presented in the Yearbook. Nutation was computed by new formulas presented by Vullard and the computations were carried out by D.V. Zagrebin, O.M. Gromova, and A.Ya. Faletova. The reduction values (algebraic system) and apparent locations of ten-day and circumpolar stars were mainly computed under the direction of M.B. Zheleznyak and M.A. Fursenko in accordance with methods developed by D.K. Kulikov. The preliminary materials for these sections of the Yearbook were prepared with the participation of E.A. Mitrofanova (in charge), O.M. Gromova, G.A. Mazing, T.I. Mashinskaya, G.M. Poznyak, K.G. Shumikhina, P.A. Gutkina, and A.K. Suslov. Other computations were carried out by the following contributors: 1) heliocentric coordinates of large planets - by O.M. Gromova and A.G. Mal'kova; 2) reduction values (trigonometric system) - by E.A. Mitrofanova and K.G. Shumikhina; 3) mean locations of stars - by E.A. Mitrofanova, M.B. Zheleznyak, O.M. Gromova, and K.G. Shumikhina; 4) eclipses of the sun and moon - by E.A. Mitrofanova and M.A. Fursenko; 5) planetary configurations - by E.M. Mitrofanova and O.M. Gromova; 6) ephemeris for physical observations of the sun - by P.A. Gutkina and T.I. Mashinskaya; 7) ephemeris for physical observations of the moon - by G.A. Mazing and T.I. Mashinskaya; 8) illumination ephemerides of the Mercury and Venus disks - by T.I. Mashinskaya and E.A. Mitrofanova; 9) ephemeris

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AUTHOR: Subbotin, M. F.

TITLE: On Differential Correction of Orbits With Eccentricities Slightly Different From Unity

PERIODICAL: Byulleten' Instituta Teoreticheskoy Astronomii, 1959, Vol. 7, No. 6, pp. 407-415

TEXT: The author reviews briefly the development of the method of differential correction of orbital elements from Euler, who introduced it into astronomical practice in 1740, to Eckert and Brouwer, who applied this method to correcting the orbits of small planets and short-periodic comets in 1937. The method of Eckert and Brouwer becomes inapplicable to cases when eccentricity is very near the unity value. The application of this method to the latter case was elaborated by the author in 1941 and Dubyago in 1949, both of them having assumed T (time of passing the perihelion), q (perihelion distance) and e (eccentricity) to be the inner elements subject to correction. In the present article the author derives formulae permitting the application of Eckert and Brouwer's method to correcting the inner elements of orbits whose eccentricities differ slightly from unity, but the

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On the Differential Correction of Orbits With Eccentricities Slightly Different From Unity

elements subject to correction are other ones, i. e.: T, q and h, the latter is the constant of energy and is defined as follows:

$$h = -a^{-1}.$$

Moreover, the author uses rectangular equatorial heliocentric coordinates, x... Denoting by ∂x the differentials of these coordinates corresponding to variations of the inner elements alone, he writes down the formula in which the orbit is determined by the elements T, q and h:

$$\partial x = \frac{\partial x}{\partial T} dT + \frac{\partial x}{\partial q} dq + \frac{\partial x}{\partial h} dh, \qquad (4)$$

where

$$\frac{\partial x}{\partial T} = -\dot{x}; \quad \frac{\partial x}{\partial q} = Qx + Q'\dot{x}; \quad \frac{\partial x}{\partial h} = Hx + H'\dot{x}.$$

The values of coefficients entering this formula are given by the following expressions:

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$$Q = \frac{1 + e^2 + hr}{ep}, \quad Q' = -\frac{r\dot{r}\,(r + p)}{k^2 ep}, \qquad (5)$$

and

$$H = \frac{r - q}{e\,(1+e)}, \quad H' = -\frac{3}{2}\,a\,(t - T) + \frac{ar\dot{r}\,(r + p)}{k^2 e\,(1 + e)} \qquad (6)$$

Coefficients H, Q and Q' need not be transformed in the present case, because c 1, a . The expression for H' is substituted by another one, more convenient for calculations, which looks like this

$$H' = q^{5/2}\sigma\left[\frac{m}{1+e}\,(\;) - \sigma \; - \frac{\zeta + e\sigma^4}{1+\sqrt{1 - \zeta}} - \sigma^4\,T\,(\zeta)\right], \qquad (12)$$

where m = 41.1058431; $\sigma = \frac{\sqrt{2}\,\sin g}{\sqrt{1 - e}}$, (g = 1/2 E); (E - eccentric anomaly)

$$\zeta = \sin^2 g = 1/2\,(1 - e)\,\sigma^2 \qquad (10)$$

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On the Differential Correction of Orbits With Eccentricities Slightly Different From Unity

In order to solve equation (15) and to find , the initial approximate value of this quantity is calculated from the equation of parabolic motion with the aid of the well-known tables:

$$2\,m\left(\sigma + \frac{1}{3}\sigma^3\right) = q^{-3/2}\,(t - T).$$

Using the approximate value of σ found from this equation the corresponding value of ζ is found and equation (15) is solved again (by linear interpolation). Successive approximations converge rather rapidly. Formulae for the correction of parabolic orbits are readily obtained from the general formulae derived. They look as follows:

$$Q = \frac{1}{q}, \quad H = \frac{1}{2}(r - q),$$
$$Q' = -k^{-2} r\dot{r}\left(\frac{r}{p} + 1\right) = -2\,m\,\sigma\sqrt{q}\left(\frac{r}{p} + 1\right), \qquad (16)$$
$$k^{-2} = 3379.381, \quad 2m = 82.211\,6863.$$

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Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 9, p. 10, # 8666

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AUTHOR: Subbotin, M.F.

TITLE: On Calculating Parabolic Orbits

PERIODICAL: Byul. In-ta teor. astron. AN SSSR, 1959, Vol. 7. No. 6, pp. 416-419, (French summary)

TEXT: The problem of calculating a parabolic orbit by the Olbers method is reduced to the joint solution of the Olbers equation, $\rho_2 = M\rho_1 + m$, and the Euler equation $6\tau = (r_1+r_2+s)^{3/2} - (r_1+r_2-s)^{3/2}$, in which heliocentric distances r are connected with geocentric distances ρ through the direction cosines of comets and Sun's coordinates. It is proposed to reduce the Euler equation to the form

$$3\sqrt{2}\tau = (2R + 3\mathfrak{X})\sqrt{R} \qquad (1)$$

where $\mathfrak{X}^2 = 2(r_1r_2+x_1x_2+y_1y_2+z_1z_2)$ and $R = r_1+r_2-\mathfrak{X}$. Thus the calculation of

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SUBBOTIN, M.F., otv.red.

[Astronomical yearbook of the U.S.S.R. for 1962] Astronomicheskii ezhegodnik SSSR na 1962 g. Moskva. Vol.41. 1960. 647 p. (MIRA 14:2)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta teoreticheskoy astronomii AN SSSR, chlen-korrespondent AN SSSR (for Subbotin).

(Astronomy--Yearbooks)

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PHASE I BOOK EXPLOITATION SOV/4374

Astronomiya v SSSR za sorok let 1917 - 1957; sbornik statey (Forty Years of Astronomy in the USSR, 1917-1957; Collection of Articles) Moscow, Fizmatgiz, 1960. 729 p. 2,000 copies printed.

Ed.: L. V. Samsonenko; Tech. Ed.: N. A. Tumarkina; Editorial Board: A. A. Mikhaylov (Resp. Ed.), M. S. Zverev, P. G. Kulikovskiy, A. G. Masevich, E. R. Mustel'; V. V. Sobolev, and M. F. Subbotin.

PURPOSE: This book is intended for astronomers, astrophysicists, and others interested in the history of astronomy in the USSR.

COVERAGE: This major work on the history of astronomy in the USSR consists of two parts, review articles and bibliographies. Part I contains a collection of articles on various facets of astronomical research written by leading Soviet specialists in the field. Chief emphasis is placed on developments of the last ten years. The research activities and equipment of 23 Soviet observatories and institutes are described, and the leading scientific personalities of each mentioned. The geographic coordinates and elevations of 41 astronomical centers are listed. Individual articles discuss problems dealing with

[illegible], N. N. Time Service 87
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Subbotin, M. F.

On astrometrical works of the Institute ...

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time service stars, 10-day ones for ФКСЗ (FKSZ), etc. The work is being conducted on determining the constants of physical libration of the Moon and on studying the motion of a group of planetoids specially selected for determining the constants of КСЗ (KSZ).

D. Polozhentsev

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[Abstracter's note: Complete translation]

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SUBBOTIN, M.F., otv. red.

[Lunar occultations of stars visible in Abastumani, Irkutsk, Kazan, Kiev, Kitab, Leningrad, Lvov, Moscow, Odessa, Riga, Dushanbe, Tashkent, Tomsk and Kharkov in 1962-1963] Pokrytiia zvezd lunoiu vidimye v Abastumani, Irkutske, Kazani, Kieve, Kitabe, Leningrade, L'vove, Moskve, Odesse, Rige, Stalinabade, Tashkente, Tomske, Khar'kove v 1962-1963 gg. Moskva, Izd-vo Akad.nauk SSSR, 1961. 60 p. (Prilozhenie k "Astronomicheskomu ezhegodniku SSSR" na 1963 g.) (MIRA 15:1)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta teoreticheskoy astronomii AN SSSR i chlen-korrespondent AN SSSR (for Subbotin).
(Occultations)

MITROFANOVA, E.A.; SUBBOTIN, M.F., otv. red.

[Astronomical yearbook of the U.S.S.R. for 1963] Astronomicheskii ezhegodnik SSSR na 1963 g.; sorok votoroi god izdaniia. Moskva, Izd-vo Akad. nauk SSSR, 1961. 650 p. (MIRA 15:2)

1. Direktor Instituta teoreticheskoy astronomii AN SSSR i Chlen-korrespondent AN SSSR (for Subbotin).
(Astronomy--Yearbooks)

SUBBOTIN, M.F., otv. red.

[Astronomical yearbook of the U.S.S.R. for 1965] Atronomicheskii ezhegodnik SSSR na 1965 god; sorok chetvertyi god izdaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 675 p. (MIRA 15:6)

1. Chlen-korrespondent Akademii nauk SSSR, direktor Instituta teoreticheskoy astronomii Akademii nauk SSSR (for Subbotin).
(Astronomy--Yearbooks)

SUBBOTIN, M.F.

Theoretical astronomy, celestial mechanics, and astronautics.
Vest. AN SSSR 32 no.3:91-94 Mr '62. (MIRA 15:2)

1. Chlen-korrespondent AN SSSR.
(Mechanics, Celestial)

SUBBOTIN, M.F.; YAKHONTOVA, N.S., otv. red.

[Ephemerides of minor planets for 1964] Efemeridy malykh planet na 1964 god. 18 god. izd. Moskva, Izd-vo AN SSSR, 1963. 152 p. (MIRA 16:11)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.
2. Direktor Instituta teoreticheskoy astronomii chlen-korrespondent AN SSSR (for Subbotin)
(Planets, Minor—Ephemerides)

SUBBOTIN, M.F., otv. red.; GREBENIKOV, Ye.A., kand. fiz.-matem. nauk, red.; DEMIN, V.G., kand. fiz.-matem. nauk, red.; DUBOSHIN, G.N., doktor fiz.-matem. nauk, zam. otv. red.; OKHOTSIMSKIY, D.Ye., red.; YAROV-YAROVOY, M.S., kand. viz.-matem. nauk, red.; NIKOLAYEVA, L.K., red. izd-va; SHEVCHENKO, G.N., tekhn. red.

[Problems of the motion of artificial celestial bodies]Problemy dvizheniia iskusstvennykh nebesnykh tel; doklady. Moskva, Izd-vo Akad. nauk SSSR, 1963. 294 p. (MIRA 16:2)

1. Konferentsiya po obshchim i prikladnym voprosam teoreticheskoy astronomii, Moscow, 1961. 2. Chlen-korrespondent Akademii nauk SSSR (for Subbotin, Okhotsimskiy).
(Artificial satellites) (Mechanics, Celestial)
(Spaceships)

SUBBOTIN, M.F., otv. red.

[Astronomical Yearbook of the U.S.S.R. for 1966] Astronomicheskii ezhegodnik SSSR na 1966 god; sorok piatyi god izdaniia. Moskva, Izd-vo Akad. nauk SSSR, 1963. 666 p. (MIRA 16:6)

1. Direktor Instituta teoreticheskoy astronomii AN SSSR chlen-korrespondent AN SSSR (for Subbotin).

(Astronomy--Yearbooks)

SUBBOTIN, M.F., otv. red.

[Astronomical yearbook of the U.S.S.R. for 1968] Astronomicheskii ezhegodnik SSSR na 1968 g. Sorok sed'moi god izdaniia. Moskva, Nauka, 1964. 670 p. (MIRA 17:12)

1. Direktor Instituta teoreticheskoy astronomii AN SSSR, chlen-korrespondent AN SSSR.

SHARAF, Sh.G.; BUDNIKOVA, N.A.; SUBBOTIN, M.F., otv. red.

[Theory of the motion of Pluto. Pt 2. Pluto's perturbations of the second order in relation to perturbing masses. Pt.3. Recomputation of Pluto's perturbations of the first order in relation to perturbing masses. Pt.4. Pluto's new elements.] Teoriia dvizheniia Plutona. Moskva, Nauka. Pt.2. Vozmushcheniia Plutona vtorogo poriadka otnositel'no vozmushchaiushchikh mass. Pt.3. Perevychislenie vozmushchenii Plutona pervogo poriadka otnositel'no vozmushchaiushchikh mass. Pt.4. Novye elementy Plutona. 1964. 161 p. (Akademiia nauk SSSR. Institut teoreticheskoi astronomii. Trudy, no.10). (MIRA 17:11)

1. Direktor Instituta teoreticheskoy astronomii AN SSSR; chlen-korrespondent AN SSSR (for Subbotin).

SUBBOTIN, M.F.

Dmitrii Kuz'mich Kulikov, 1912-1964; obituary. Biul. Inst. teor. astron. 9 no.9:583-584 '64. (MIRA 17:12)

CHEBOTAREV, Gleb Aleksandrovich; SUBBOTIN, M.F., otv. red.

[Analytic and numerical methods in celestial mechanics]
Analiticheskie i chislennye metody nebesnoi mekhaniki.
Moskva, Nauka, 1965. 366 p. (MIRA 18:9)

1. Chlen-korrespondent AN SSSR (for Subbotin).

SMYSLOV, I.I.; SUBBOTIN, M.I.

Use of metal glue in manufacturing piezoelectric transducers.
Prib. i tekh. eksp. 9 no.1:226 Ja-F '64. (MIRA 17:4)

SUBBOTIN, M.I.; NERSESOV, I.L.

Fluxmetric inclinometer. Trudy Geofiz.inst. no.30:198-207 '55.
(Inclinometer) (MIRA 9:6)

AUTHOR: Subbotin, M.I. (Moscow) SOV/24-58-11-26/42

TITLE: Experimental Determination of the Constants of Devices of Finite Response Time (Eksperimental'noye cpredeleniye postoyannykh inertsionnykh priborov)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye tekhnicheskikh Nauk, 1958, Nr 11, pp 106 - 107 (USSR)

ABSTRACT: Shock-excited free oscillations are recorded to high accuracy; if the damping is low the natural frequency and damping coefficient can be calculated from the times when the deflection passes through zero. If the damping is high, it is necessary to use the magnitudes of the deflections at the peak and at the inflection, though the results are then less accurate. There are 2 figures and 1 Soviet reference.

SUBMITTED: July 14, 1958

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SUBBOTIN, M.I.

Investigating liquid damping in vibrometers. Trudy Inst. mash.
1:53-63 '59. (MIRA 12:12)
(Vibration--Measurement) (Damping (Mechanics))

SOV/120-59-4-26/50

AUTHORS: Gubkin, A.N., Mitronina, V. S., Sergiyenko, V. F.,
Subbotin, M. I.

TITLE: Methods of Measuring the Electret Charge

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 113-118 (USSR)

ABSTRACT: The authors review methods and equipment used in measurement of the surface charge of electrets. The review begins with a description of the electric field of an electret between two metal electrodes at the same potential (the "short-circuited electret", Fig 1). Gubkin (Ref 6) showed that the electric fields between the electret surfaces and the metal electrodes and the field inside an electret are given by Eqs (1) and (2) where E^e_{mA} is the electric field between the m-th electret surface and the electrode A ; E_i is the electric field inside the electret; d_1 and d_2 are the gaps between the electrodes A and B and the electret surfaces; σ^o_1 and σ^o_2 are the absolute densities of charge on the first and second electret surfaces respectively; L is the electret thickness; ε is the permittivity of the electret material; σ^A_m is the surface density of a

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Methods of Measuring the Electret Charge

charge induced on the electrode A by the charge on the m-th surface of the electret. Three methods of measuring the electret surface charge are discussed in the present review. One of these methods is the electrostatic induction method (Fig 2). The electrode A is lowered until it is in contact with the upper electret surface with the switch K closed. It follows then from Eq (1) that if $\varepsilon(d_1 + d_2)/L \ll 1$, and $\sigma_1^0 \approx \sigma_2^0$, then a charge equal and opposite in sign to the charge on the electret surface is induced on the electrode A. The switch K is then opened and the electrode A is raised. If $\varepsilon d_1/L \gg 1$, then the induced charge on the electrode A is almost completely free and it distributes itself between the capacitances C_1 and $C = C_v + C_o$, connected in parallel (C_1 is the capacitance of the electrode A; C_v is the capacitance

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Methods of Measuring the Electret Charge

of a voltmeter used in measurements and C_0 is the capacitance which shunts the voltmeter). If $C \gg C_1$ the induced charge on the electrode A is given by $\sigma^0 = q/S$, where S is the electret surface area. If the inequality $\varepsilon(d_1 + d_2)/L \ll 1$ is not satisfied (this happens in the case of electrets with high permittivity), the σ^0 is calculated using Eq (1). The authors discuss two variants of the electrostatic induction method which use the relationship between the electret surface charge and the displacement current generated in an alternating electret field. In the first variant the electret field is varied by vibrating the electrode A above the electret surface. In the second variant the electret field is varied by rotation of a metal vane ("biscuit") between the electrode A and the electret surface. The authors derive equations (Eqs 4-7) which give the electret surface charge for both variants; Eqs (5) and (7) apply in the special case when $\sigma_1^0 = -\sigma_2^0 = \sigma^0$ i.e. when the charge densities on two opposite electret surfaces are equal in magnitude but opposite in sign. Fig 5

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shows schematically one of the vibrators used in measurements, following the first variant of the electrostatic induction method. The moving system, which includes the electret (8 in Fig 3) vibrates due to interaction of an alternating magnetic field of a coil 7 with a field of a permanent magnet 2 . This vibrator can be used in conjunction with a selective amplifier shown in Fig 4. Fig 5 shows another vibrator (only the upper electrode is moved, the electret is kept fixed). The vibrations are produced by interaction of a steel core 13 with an alternating magnetic field of a solenoid 9 . Fig 6 shows a device for measuring the electret surface charge using the second (rotating vane) variant of the electrostatic induction method. Thevane 10 is rotated at 100-200 c/s. The second method of measuring the electret surface charge uses depolarization of electrets which occurs spontaneously during storage. The depolarization consists of a slow decrease of the amount of bound (hetero-charge

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Methods of Measuring the Electret Charge

σ_f^o) and free (homo-charge σ_r^o) charges of an electret. This may be due to disorientation of the "dipoles" by thermal motion (producing a displacement current of density j_1), due to mutual neutralization of free charge in the internal field of the electret E_i (producing current of density j_2) and due to transfer of free charge from the electret surface to an external electrode (producing a displacement current of density j_3). The current density in the external circuit joining the two electrodes A and B (Fig 7) is given by:

$$I = K\left(- \frac{d\sigma^o}{dt} + j_3\right)$$

where $$K = \left[\varepsilon (d_1 + d_2)/L + 1\right]^{-1} .$$

By measuring the variation of I with time, which is large when electrets are depolarized artificially by heating or illumination, the value of σ^o can be found if j_3

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is known. Since in practice it is not possible to measure the current density j_3, the charge density on the electret can be found only in the special cases $j_2 = 0$ and $j_3 = 0$. For ceramic electrets the depolarization method yielded values of $\sigma^c \approx 10^{-9} .. 10^{-8}$ coulomb/cm^2. The third method of measuring the surface charges on electrets uses interactions in the electret field. Two variations of this method are employed: 1) displacement of a movable electrode in the field of an electret and 2) deviation of an electron beam in the electret field. Both these variants yield the charge density induced on the electrode A (Eqs 13 and 14), and Eq (1) has to be used to obtain the surface charge density on the electret. Acknowledgments are made to

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Methods of Measuring the Electret Charge

G. I. Skanavi for his advice and to V. S. Mashtakov and V. D. Kopanev for their help in carrying out this work. There are 7 figures and 7 references, 3 of which are Soviet and 4 English.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute, Academy of Sciences USSR)

SUBMITTED: July 3, 1958.

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8(2) SOV/179-59-4-28/40

AUTHOR: Subbotin, M. I., (Moscow)

TITLE: On the Sensitivity of Vibration Measuring Devices With Extension Feelers

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1959, Nr 4, pp 163 - 164 (USSR)

ABSTRACT: The wire extension feelers are often used in vibration measuring instruments as transformers of the mechanical displacement of the inert mass of the device into an electric potential. For this purpose, they are stuck to the elastic element where they react to the deformations originating in the motion of the inert mass with respect to the casing of the device. The construction of vibration measuring devices of this type is investigated for the purpose of raising their sensitivity. Such a device can in most cases be represented schematically in the form of a load of the inert mass on one or two laminated springs (Fig 1). Scheme b in this figure is distinguished by the circumstance that the load can only perform a progressive motion. The formulas (1) are obtained in both cases for the amplitude of forced vibration. The formulas (2) are then derived for the relative deformations of the extension feelers in these two cases. As too complicated

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expressions are obtained by substituting the values of formulas (1) into the formulas (2), they are simplified by investigating separately the method of operation of the device as an accelerometer or vibration meter. Formulas (3) and (4) are obtained for the sensitivity in these two cases. An analysis of formulas (3) and (4) shows the following facts: It is convenient to choose the fundamental frequency of the accelerometer as low as possible (and the fundamental frequency of the vibration meter as high as possible) under consideration of the conditions of measurement. It is convenient to make the elastic element of a material with small c (velocity of longitudinal waves in the spring material). The sensitivity also depends on $n\gamma_1^2$ or $n\gamma_2^2$ in the accelerometer, and on γ_1^{-2} or γ_2^{-2} in the vibration meter. γ_1 and γ_2 are the least roots of the denominators in formulas (1). $n = \frac{M}{m}$, M denoting the mass of load, and m the mass of spring. It is shown that in scheme b in figure 1, 4 transmitters connected with each other, can be stuck to the spring, thus doubling the

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sensitivity. The advantage of scheme a is the simple method of production. There are 3 figures and 4 Soviet references.

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TITLE: The Nomographic Calculation of Vibration Measuring Instruments of the Simple Type (Nomograficheskiy raschet vibroizmeritel'nykh priborov prostogo tipa)

PERIODICAL: Priborostroyeniye, 1959, Nr 6, pp 27 - 28 (USSR)

ABSTRACT: Vibrations are often investigated by means of vibration meters consisting of a flat metal spring with a load on the free extremity (Fig 1). The constructional dimensions of such vibration meters must be calculated on the basis of the eigen-frequency. To facilitate this calculation, nomograms were plotted in the Institute mentioned below, on the basis of the eigen-frequency formula (Fig 2, Fig 3); the practical application thereof is shown by an example (Fig 4). There are 4 figures. Institute referred to above:

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